



# **mCare: Development, Deployment and Evaluation of a Mobile Telephony-based Patient Secure Messaging System**

## **Project Overview**

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# Disclaimer

"The views and opinions expressed in this presentation are those of the author and do not reflect official policy or position of the Department of the Army, Department of Defense or the U.S. Government."

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# mCare Project Overview

## What it is:

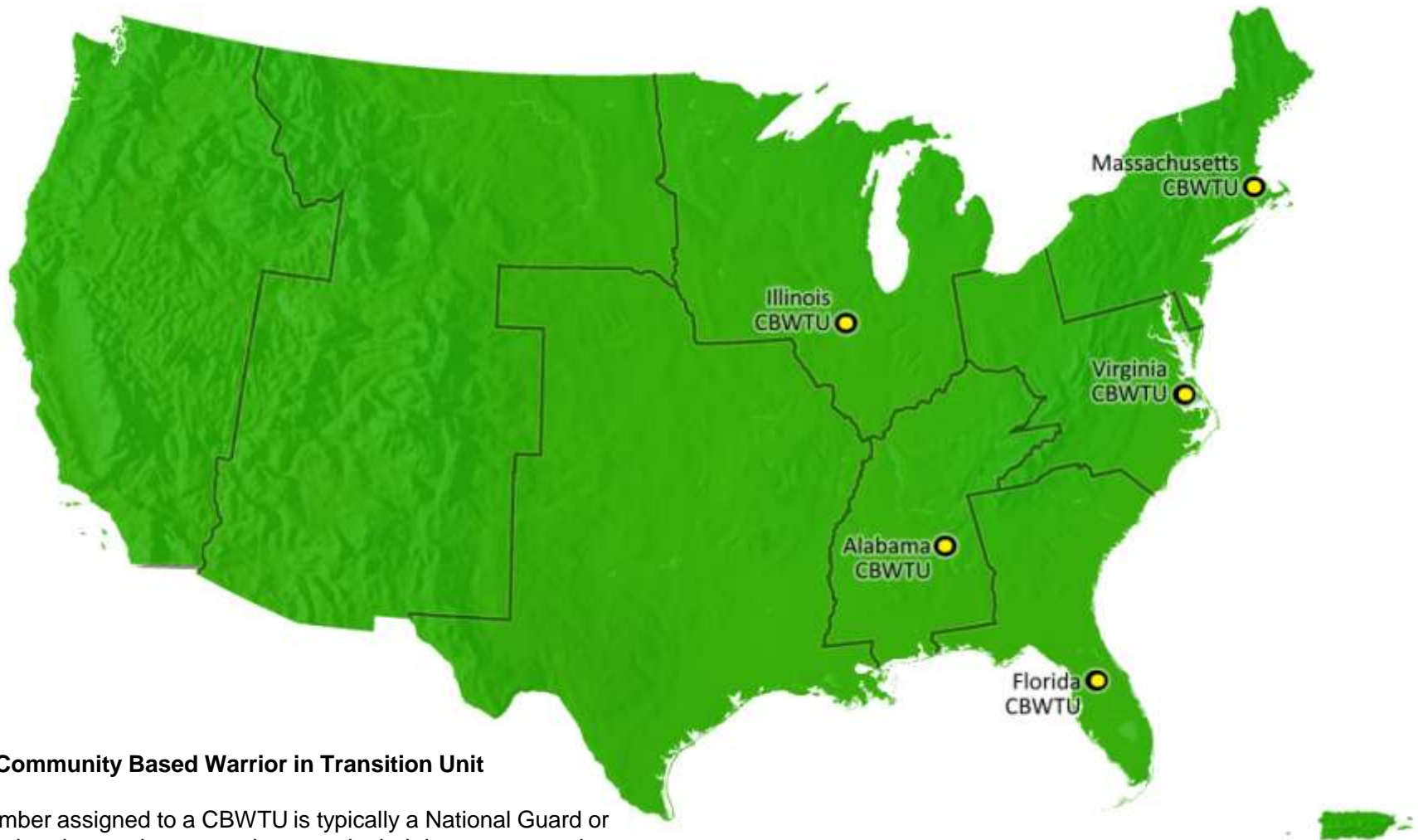
- ✓ Synchronization over distance of:
  - mTBI patients
  - Other Wounded Warriors
  - Military care team members
- ✓ Uses patients' EXISTING cell phones
- ✓ Secure, HIPAA compliant messaging
- ✓ Simple patient responses (typically 1 character or one click)
- ✓ Care team leverages a website to access information

## What it is not:

- ✗ Issuing soldiers cell phones
- ✗ Expecting patients to perform complicated technology tasks
- ✗ Text messaging (SMS) of PII or PHI
- ✗ Expecting care team members to “text message” the patient



# mCare Sites and Regions



**CBWTU = Community Based Warrior in Transition Unit**

Service member assigned to a CBWTU is typically a National Guard or Army Reservist who receives outpatient care in their home community and is monitored remotely by a case manager/care team from a regional case management center.



# mCare at a Glance





# mCare Technical Requirements

- Major US Wireless Carrier (AT&T, T-Mobile, Sprint Nextel and/or Verizon)
- Screen Display of 176 x 200 or larger
- Text messaging (SMS) services
- Data service
  - Required to securely transmit PII/PHI via SSL to mobile device
  - Can be a limitation to enrollment

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# mCare Text Message Alerts

- The patient interaction begins when he/she receives an SMS (text message) alert.
- This alert allows the cell phone user to know there is new information available in the mCare application, but does not reveal any specifics that might violate privacy considerations.
- The text message alert is also specific as to what section of the mCare phone application contains the new information, as shown

41782  
Jan 8, 2010 11:42:14 AM  
A new My Announcements message has been assigned to you. Please launch the mCare application to view this new message.

41782  
Jan 11, 2010 1:09:45 PM  
A new My Appointment Reminders message has been assigned to you. Please launch the mCare application to view this new message.

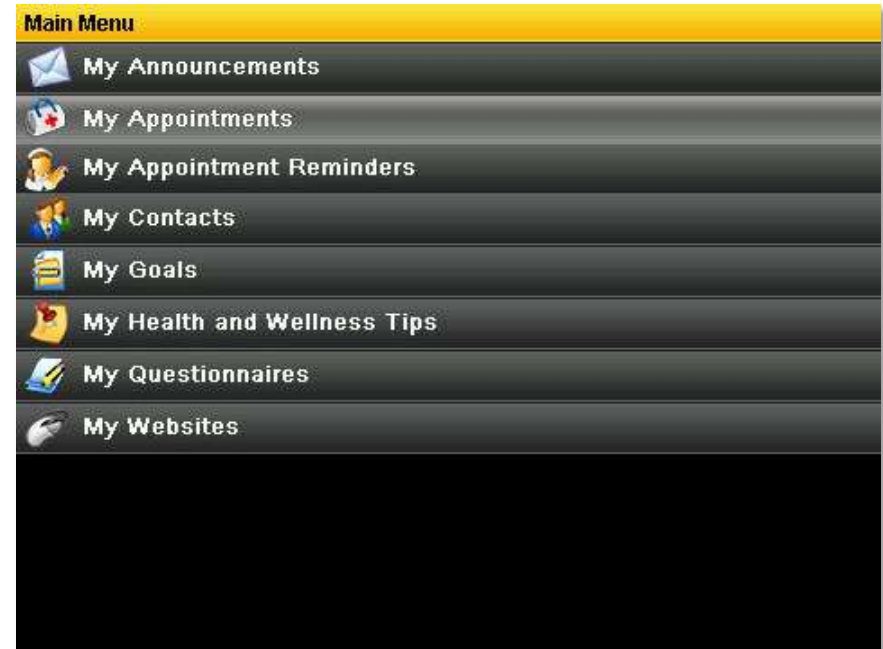
41782  
Jan 8, 2010 11:40:21 AM  
A new My Questionnaires message has been assigned to you. Please launch the mCare application to view this new message.

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# mCare Main Menu

- The mCare phone menu has multiple options, this is a direct result of patient feedback
- Some menus are static, and will always appear on the device (i.e. My Appointments, My Contacts, My Goals, My Websites).
- Other menus will only appear as specific messages are sent to the phone (i.e. My Announcements, My Appointment Reminders, My Health and Wellness Tips, My Questionnaires)



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# Appointment Reminders

- Appointment reminders are sent to the patient's phone 24 hours & 90 minutes before a confirmed appointment
- These messages are scheduled automatically by the system, and the only action required by the care team is to confirm the appointment entry through the website.
- Step 1: The patient receives a text message alert
- Step 2: The patient opens his/her appointment reminder in mCare, and answers questions
- These responses are returned to the mCare website, and when applicable members of the unit care team are notified of changes or intent to no-show by email alerts to login to the website

## 24 Hours Prior

The mCare records indicate you have an appointment scheduled with Orthopedics at 1/20/2010 3:00:00 PM tomorrow. Is this correct?

☒ Yes

☐ No

## 24 Hours Prior

Do you plan to attend your appointment with Orthopedics at 1/20/2010 3:00:00 PM tomorrow?

☒ Yes

☐ No

## 24 Hours Prior

Thank you for keeping your appointment records current by answering these questions

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# mCare Website

Home User Management

**Sign in with your mCare application credentials**

mCare User ID


Password

 [Sign In](#)

**Welcome to mCare Secured Website.**

To continue, you must be a registered user of the mCare application. You must have the correct credentials to go beyond this point.

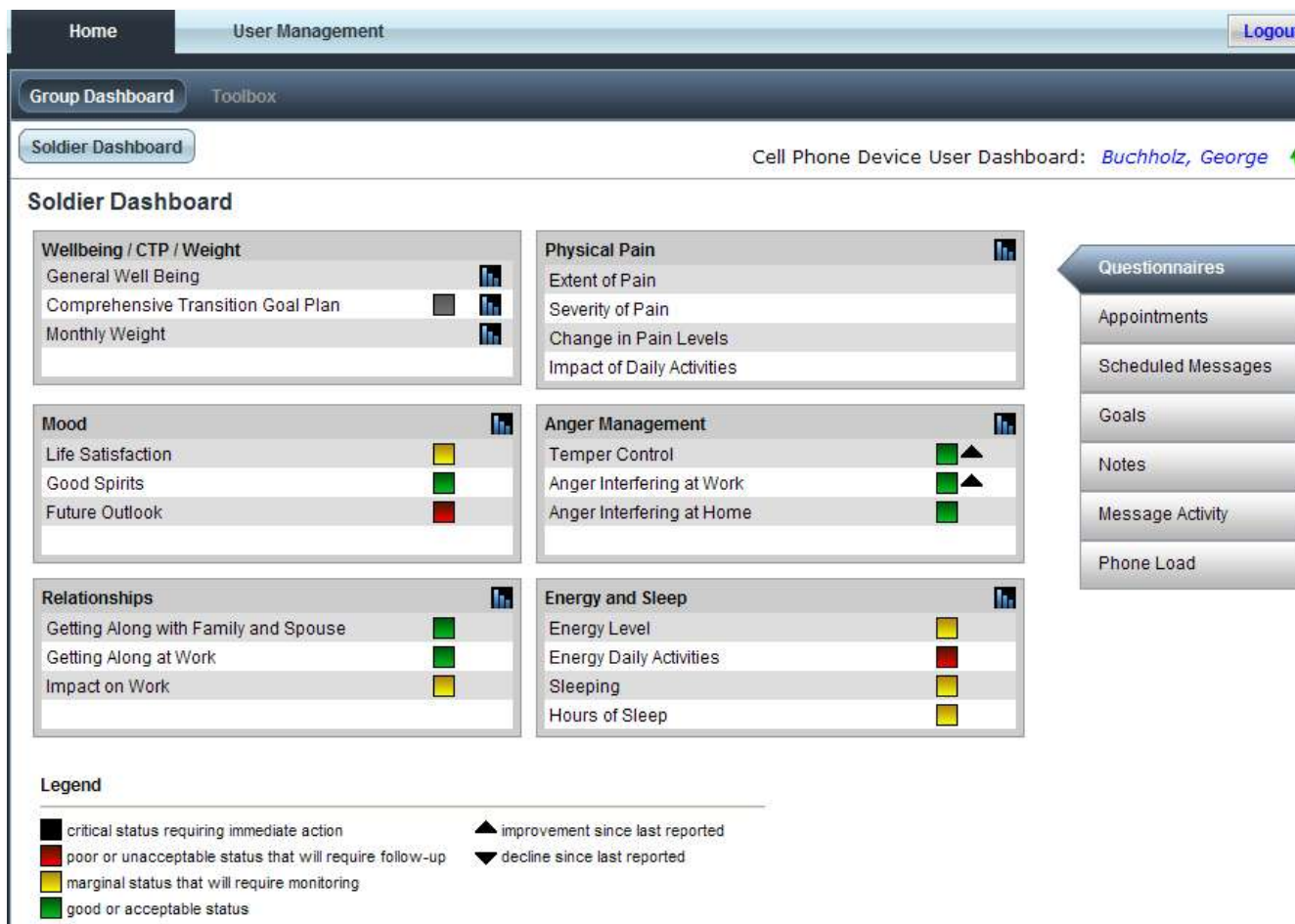
If you have forgotten your credentials please contact your site's mCare Project Liaison or the mCare System Administrator,

[Mr. Kurt Huttar](#) 

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# mCare Dashboard

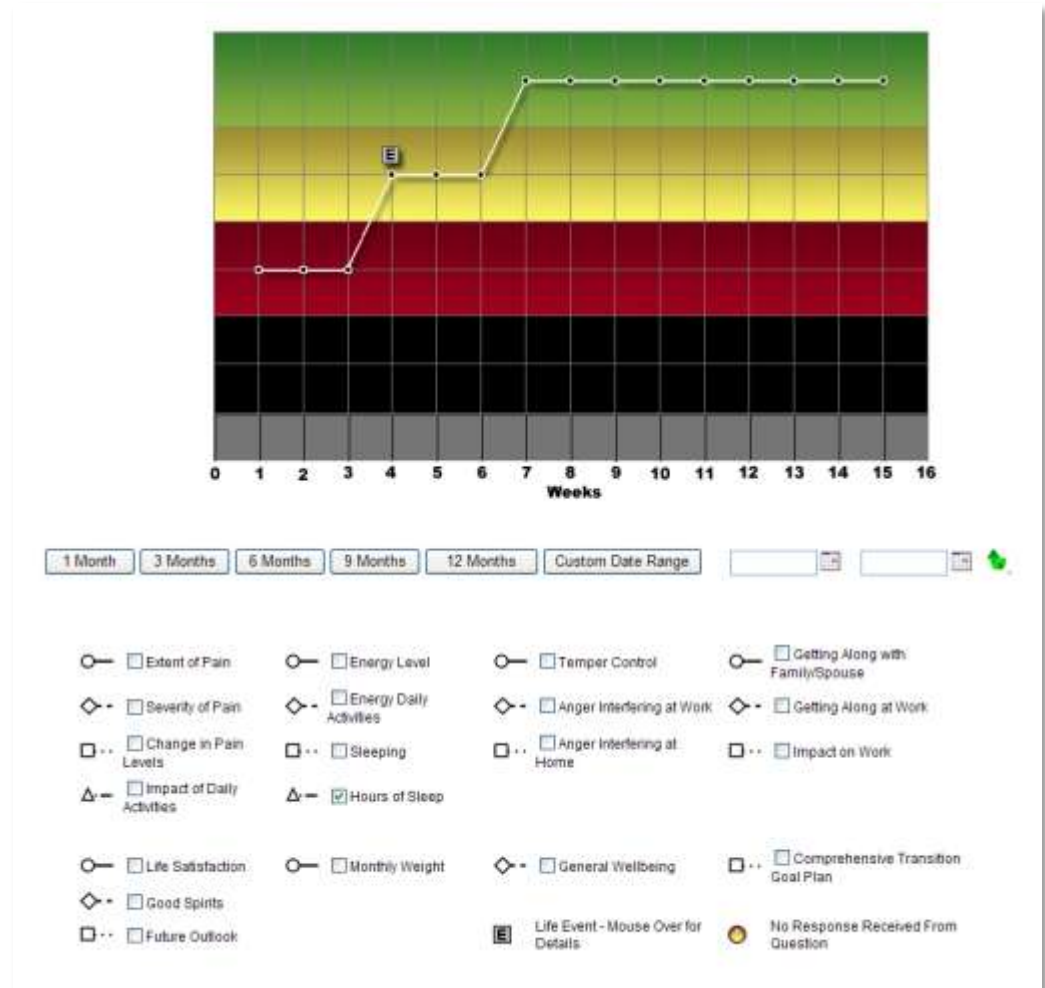


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# Graphical Feedback

- Graphs are source of trend data for the research study
- Can display a single element, and then customized with menu below the graph
- Will include concurrent events, or notes, when entered for a specific cell phone user.



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# mCare Toolbox



ARMY STRONG

[Home](#) [User Management](#) [Logout](#)

[Group Dashboard](#) [Toolbox](#)

## Toolbox

### Announcements

With this tool you can Add New, Schedule and Assign Existing Announcements.



### Health & Wellness Tips

With this tool you can Edit, Delete, Copy, Schedule, Assign and Deactivate Tips.



### Questionnaires

With this tool you can Add New, Schedule and Assign Questionnaires



### Websites / Links

With this tool you can Add New, Edit and Delete Websites / Links.



### Cell Phone Group Admin

With this tool you can Add New, Edit Transfer and Delete Groups.



### Appointment Confirmation (All Patients)

With this tool you can Add New, Confirm, Edit and Delete Appointments.



### Scheduler

With this tool you can add new and view existing schedules



### Extras / Fun Stuff

With this tool you can Add New, Edit and Delete Extras/ Fun Stuff.



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# Implementation Strategy

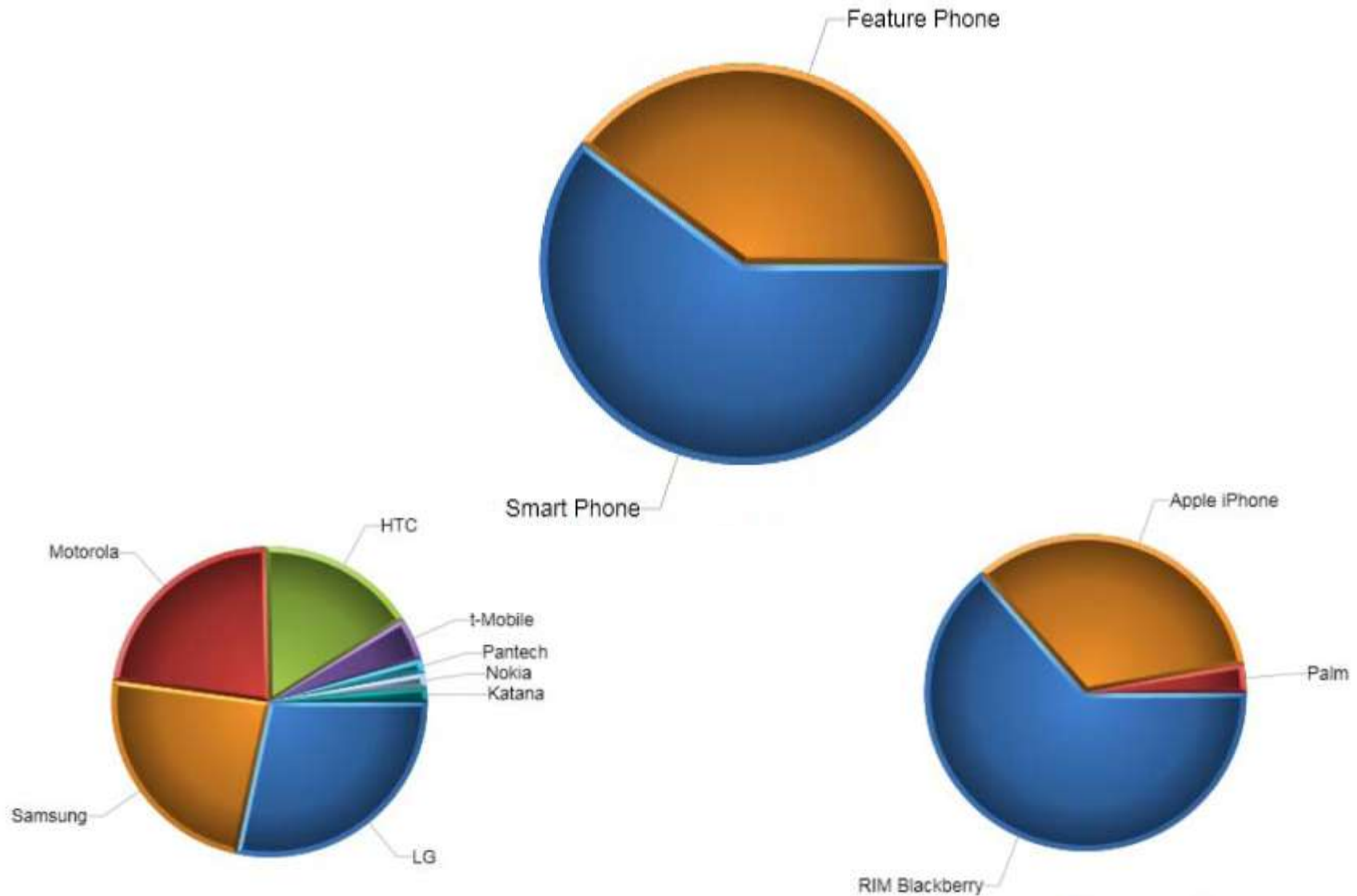
- Command Briefings
- Site Visits/Needs Assessments
- Workshops/Training Sessions
- Weekly Meetings
- Monthly Newsletter
- Tri-folds
- User Feedback to Guide Policies
- Conduct Focus Groups
- Wireless Carriers/Application Centers (iPhone/Android)

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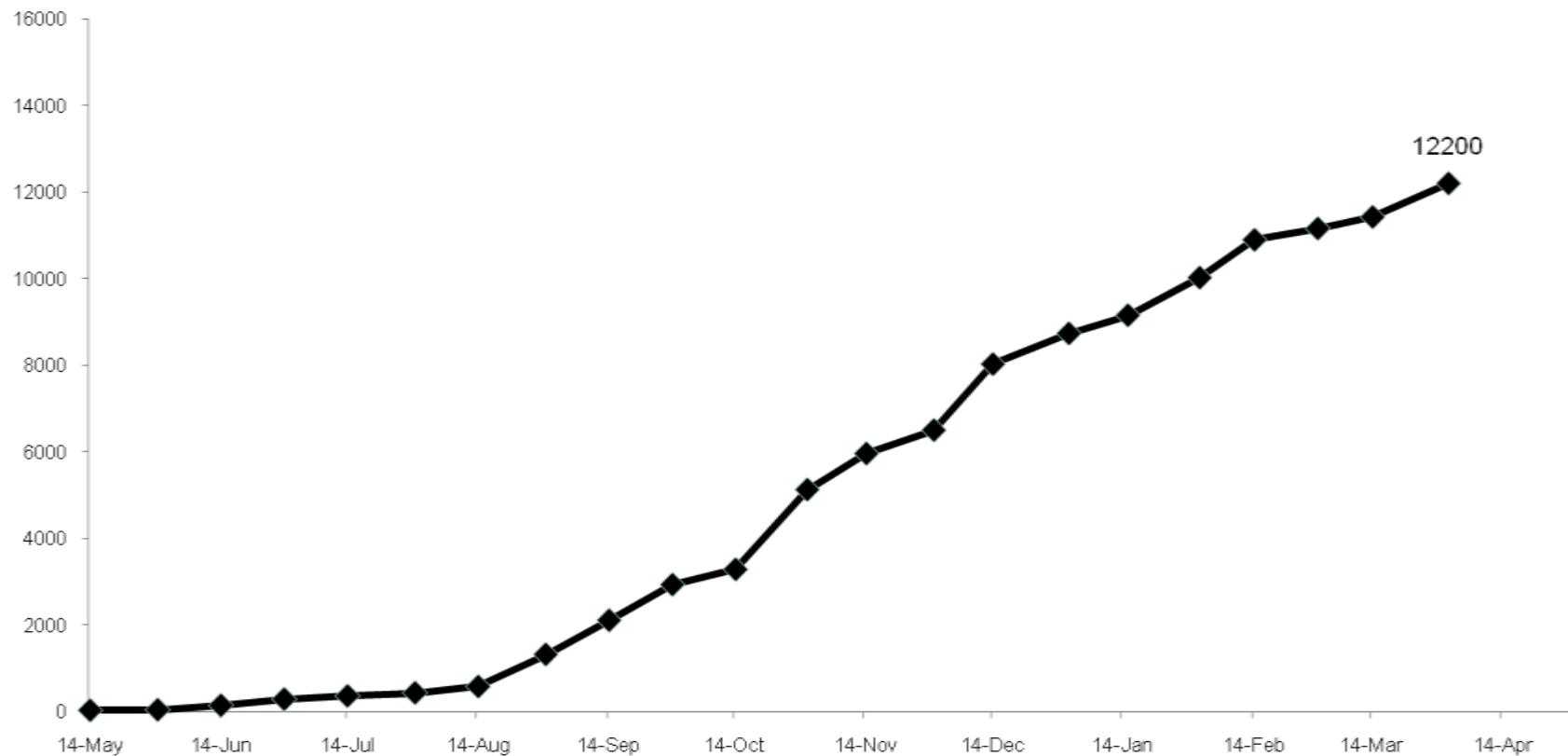


# mCare Phone Device Distribution





# mCare Message Utilization from Launch Date



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# Survey Results

- Over 75% of responders found mCare easy to use.
- Over 90% of users found the health and wellness tips sent through mCare to be helpful and relevant to them.
- Nearly 85% of users reported that they would find appointment reminders helpful.
- When presented with the option of receiving unit information via mCare, email, or both, the majority of patients surveyed preferred both.

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# Impact of mCare

*“It prevents you from feeling alone; it just tells me I’m in contact. This is a hard process and I know that I have issues that won’t ever get fully resolved. But mCare is just comforting. When the messages pop-up, you know someone’s there.”*

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# Future Analysis: Research Study

Outcomes	Objective	Measurement	Expected Benefit
Administrative	Increasing contract rates	Contact rates assessment btw SM, CM and PS	Improvement contact rates
	Satisfaction with CM Care	Management Quality Assessment	Increased communication = increased satisfaction
	Appointment attendance rates	Rates of verified appointment attendance	Decreased no-show rates
Clinical *	Well-being/ Neurobehavioral	General Well-Being Schedule Neurobehavioral symptom Inventory	Evaluation of current symptoms
	Goal awareness	Comprehensive Transition Plan assessment	Accurate goal awareness
Technological	System performance	System analysis	Prioritization of features required
	System utilization – Service Member	System analysis	System is functional and reliable
	System utilization – Case Manager/Platoon Sergeant	System analysis	System is functional and reliable
System-based	User Satisfaction – Service Member	Focus group evaluation QUIS technology assessment	Acceptability of system
	User Satisfaction – Case Manager/Platoon Sergeant	Focus group evaluation QUIS technology assessment	Acceptability of system



# mCare Team Acknowledgements

- COL Ron Poropatich
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- Dr. Fran McVeigh
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